Alg. 2 Warm Up # 8-5

1. Simplify: $\left(\dfrac{6x^2y^7}{(3x^5)^2y^4}\right)^3 = \dfrac{6^3x^6y^{21}}{(3^2x^{10}y^4)^3}$

$\dfrac{\cancel{6}\cdot\cancel{6}\cdot\cancel{6}}{\cancel{3}\cdot\cancel{3}\cdot3\cdot\cancel{3}\cdot3\cdot3} = \dfrac{8}{27}$ $= \dfrac{216\,x^6\,y^{21}}{\cancel{3^6}\,x^{30}\,y^{12}}$ 729

$\boxed{= \dfrac{8\,y^9}{27\,x^{24}}}$

2. Simplify: $\sqrt{27x^3y^7z^8}$

$\boxed{2}$ $(y^3)^2$

$= \sqrt{9\cdot3\cdot x^2\cdot x^1\cdot y^6\cdot y^1\cdot z^8}$

$= \boxed{3xy^3z^4\sqrt{3xy}}$

Questions Green worksheet:

10)

$$\sqrt{\frac{21}{28}} = \sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{\sqrt{4}} = \boxed{\frac{\sqrt{3}}{2}}$$

5

$$\frac{(2^1x^3)^2}{6x^{-8}} = \frac{\overset{4}{\cancel{2^2}}\,x^{6--8}}{6\,x^{-8}} = \boxed{\frac{2\,x^{14}}{3}}$$

Questions Green worksheet:

30

$2x^2 - 18$

$2(x^2 - 9)$

$\boxed{2(x+3)(x-3)}$

29

$4x^2 - 1$

$(2x)^2 - (1)^2$

$(2x+1)(2x-1)$

Staple and turn in

Week 8 Classwork:

Warm up

2- #153 ---> 156 (white)

2- #157 (blue)

Review #1 (tan)

Is 3x + 4 equivalent to x + 8 ?

$$3x+4 = x+8$$
$$-4 \qquad -4$$
$$3x = x+4$$
$$-x \qquad -x$$
$$2x = 4$$
$$\boxed{x=2}$$

only equivalent when

to be equivalent expressions must be equal for all "x's"

$$\frac{\cancel{2}(3x+4)}{\cancel{2}} = \frac{6}{2}x + \frac{8}{2}$$

$$3x+4 = 3x+4$$

$$0 = 0$$

All x's are sol.

CP's: 3- # 1 ---> 3

p. 123

3.1.1 Are they equivalent?

Equivalent Expressions

In this chapter you will look at how to rewrite expressions and equations into equivalent forms that will make them more useful. In this lesson, you will begin by identifying equivalent expressions and then work on developing algebraic strategies to show that they are equivalent.

3-1. Consider the tile pattern at right.

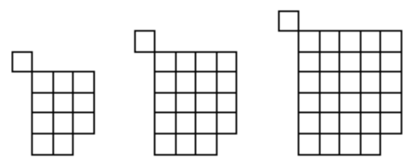


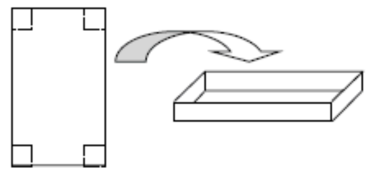
Figure 1 Figure 2 Figure 3

a. Work with your team to describe what the 100th figure would look like. Then find as many different expressions as you can for the area (the number of tiles) in Figure x. Use algebra to justify that all of your expressions are equivalent.

b. What information about the pattern is given by various parts of your different expressions?

c. Write and solve an equation to determine which figure number has 72 tiles. Do you get different results depending upon which expression you choose to use? Explain.

3-2. Jill and Terrell were looking back at their work on problem 1-53 in Lesson 1.2.1. They had come up with two different expressions for the volume of a paper box made from cutting out squares of dimensions x centimeters by x centimeters. Jill's expression was $(15-2x)(20-2x)x$, and Terrell's expression was $4x^3 - 70x^2 + 300x$.



a. Are Jill's and Terrell's expressions equivalent? Justify your answer.

b. If you have not done so already, find an algebraic method to determine whether their expressions are equivalent. Be ready to share your strategy.

c. Gary joined in on their conversation. He had another expression: $(15-2x)(10-x)2x$. Use a strategy from part (b) to decide whether his expression for the volume is equivalent to Jill's or Terrell's. Be prepared to share your ideas with the class.

3-3. For each of the following expressions, find at least three equivalent expressions. Be sure to justify how you know they are equivalent.

a. $(x+3)^2-4$ b. $(2a^2b^3)^3$ c. $m^2n^5 \cdot mn^4$ d. $\frac{(x+1)(2x-1)}{x+2}$

HW: 3-

5 ---> 12